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Transformative Pedagogy: Knowledge Construction and Effective Curriculum Delivery in a Competitive Higher Education

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Higher education has given ample proof of its viability over the centuries and of its ability to change and to induce change and progress in society. Owing to the scope and pace of change, society has become increasingly knowledge-based so that higher learning and research now act as essential components of cultural, socio-economic and environmentally sustainable development of individuals, communities and nations. Higher education itself is confronted therefore with formidable challenges and must proceed to the most radical change and renewal it has ever been required to undertake, so that our society, which is currently undergoing a profound crisis of values, can transcend mere economic considerations and incorporate deeper dimensions of morality and spirituality. (UNESCO, 2009: Reforming Higher Education).(26)

1. Introduction

Responding to the statement of UNESCO on reforming higher education, to the current discussions on possible ways of improving educational practices, and to the continuous efforts of Qatar University to invigorate the delivery of education, this article argues for more responsive higher education pedagogies that build on these efforts, while enabling future professionals to position themselves in a competitive global market; pedagogies that emerge from and respond to societal, cultural, environmental, and technological needs. A critical analysis of a number of thematic issues is conceptualized and provided to delineate the needs to integrate skill-based and knowledge-based pedagogies in teaching/learning processes. The article offers a number of scenarios that help bridge potential gaps while integrating effective mechanisms for higher education delivery, necessary for graduating competent professionals ready and able to compete in the workforce. Concomitantly, the proposed scenarios include the introduction of concepts and ideas that pertain to transformative pedagogy, the hidden curriculum, and different modes of knowledge and skill acquisitions, which are amenable to the cognitive capacity of learners.

Worldwide, governments want their countries to have high value. They appreciate that the first step towards this aim is to have a well-educated workforce (1). Qatar is no exception where an overall recognition of the connection between economic success and education has led to widening participation in university. As well, lifelong learning, knowledge enrichment, and undergraduate research experience, are all becoming priorities within the higher education sector. In common with other competitive regional economies, Qatar advocates the creation of a high-skilled, high-waged economy by upgrading the education and skills of its future workforce. According to Leitch Review of Skills (2006), the creation of world-class skills is assumed to be a

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route to economic prosperity, reduced income inequalities and a passageway to an effective social cohesion. Such directions rest on the idea of a knowledge economy where innovative ideas and technical expertise hold the key to the new global competitive challenge (2).

But, what is meant by “*Well-Educated*” workforce, how university education responds and reacts to these directions, and whether university education aims at promoting professionalism versus enlightenment or both are all crucial issues that deserve special attention? Rather than placing emphasis on skill development only, this article suggests that an integration of knowledge and skills is essential to a successful delivery of university education, with the aim of having a well-educated workforce. Notably, one of the key assets of focusing on integrating knowledge and skills is that these relate to learning outcomes or outputs rather than on learning inputs. This takes place irrespective of the routes of acquisition involved. However, in order to reach desirable outcomes, the way in which they are gained in university education is important to discuss and debate. Thinking of incorporating knowledge and skills combined, offers the potential for integrating formal education and training with informal and experiential development, essential to fulfil the objectives of an efficient delivery in a competitive higher education.

2. Conventional Teaching Practices in Higher Education

There has been — and still is — a continuous debate among educators about the role of knowledge and research in undergraduate university education as it relates to different disciplines and professions (3, 4). Whether in developed or developing countries, the public still think of researchers as people in white smocks and thick glasses searching for mystery and the unknown. In response, scholars and educators have emphasized that research should be viewed as part of everyday actions and experiences. They argue, and rightly so, that conventional teaching practices have long encouraged students to develop skills by emphasizing intuition, reflective observation, and concept formation (5). However, these practices are hypothetical in nature, largely unconcerned with real life situations, and neglect equally important skills that can be enhanced through experiential learning, research, or real interaction with the realities being studied.

Conventional teaching practices are typically articulated by three main issues; the first is “*Science as a body of knowledge versus science as a method of exploration*”, where educators tend to present the body of knowledge as a body of facts and theories and as a product of scientific inquiry. The processes that led up to this product are often hidden and internalized. The second is “*Learning theories about the phenomena versus getting the feel of the behavior of the phenomena*”, where abstract and symbolic generalizations used to describe research results do not convey the feel of the behavior of the phenomena they describe (6). The third issue concerns “*The real versus the hypothetical*”, where educators tend to offer students hypothetical experiments in the form of hypothetical exercises and projects, or lab experiments, where many contextual variables are neglected or oversimplified. In this respect, learning from the real world should be introduced. Real-life experiences can provide students with opportunities to understand the practical realities and different variables that affect real-life situations (7, 8).

In the context of discussing the preceding issues, it should be noted that recent years have witnessed intensive discussions on the value of introducing real-life issues in university teaching. However, while published experiences have debated innovative practices exemplified by exposing students to primary source materials in laboratories, or some field studies, little emphasis has been placed upon how real life issues could be introduced in or brought to theory and lecture courses in a typical classroom setting.

In conventional teaching practices, students are typically encouraged to conduct site visits and walkthrough different environments in order to observe different phenomena. This is the case in many disciplines, including, for example, visits to schools for education students, visits to factories for engineering students, visits to laboratories for science students, visits to hospitals for medical or pharmacy students, etc. Recent research indicates, however, that these visits and

exercises are simply casual and are not structured in any form of rigorous investigation or inquiry. As a result, students do not know what exactly to look for in the environment they are visiting, even though they are asked to report on these visits.

The case would be worse when educators attempt to offer students ready-made interpretations about the real world in lectures and seminar classes, leading to students' inability to think critically or develop their intellectual skills. This handicaps their abilities to gather, analyze, synthesize, and process different types of information. Conventional teaching practices have contributed to the view of higher education as a channel for developing skills and only skills, oversimplifying other critical views of it as an important contributor to a knowledge-based economy. In response, current discourses have heavily emphasized the value of knowledge acquisition and construction, and of the introduction of research based pedagogy (9).

3. Shifting from Mechanistic Pedagogy to Systemic Pedagogy

There is strong evidence that a shift in university education does exist (10, 11). Such a shift is best expressed from "mechanistic" to "systemic" pedagogy. Following the mechanistic mode, the process of educating future professionals is reduced to a large number of disconnected components. Education is decomposed into schools, curricula, grades, subjects, courses, lectures, lessons, and exercises. In this respect, I argue that formal education has never been treated as a whole, nor is it appropriately conceptualized as part of a process – much of which takes place within society; a characteristic of the systemic pedagogy.

The mechanistic orientation of pedagogy results in the treatment of students as if they were machines with the combined properties and characteristics of tape recorders, cameras, and computers. The student is evaluated with respect to his/ her ability to reproduce what he/ she has been told or shown. In turn, examinations are tests of the ability to reproduce material previously presented to the examined. They are designed to serve the system's purposes rather than the students' needs. In the mechanistic mode, educators make little effort to relate the pieces of information they dispense. In most cases, a course in one subject does not refer to the content of another. This reinforces the concept that knowledge is made up of many unrelated parts, and thereby emphasis is placed on hypothetical assignments rather than real-life issues. Inversely, the systemic mode focuses on grasping the relationships between different parts of bodies of knowledge.

In essence, the systemic mode introduces some alternative concepts that can be exemplified as follows:

- some subjects are best learned by teaching them to oneself,
- some subjects are best learned by teaching them to others,
- some skills are best learned through demonstration and instruction, and
- some fundamentals are attained in seminar discussions guided by one specialized in the relevant area.

While mechanistic pedagogy is based for the most part upon showing-telling modes of communication, the systemic pedagogy places emphasis on learning by experience, learning by exploring and doing. I argue that while the mechanistic mode still prevails in most higher education institutions worldwide, current discussions reveal that there are strong moves toward adopting systemic pedagogy (12).

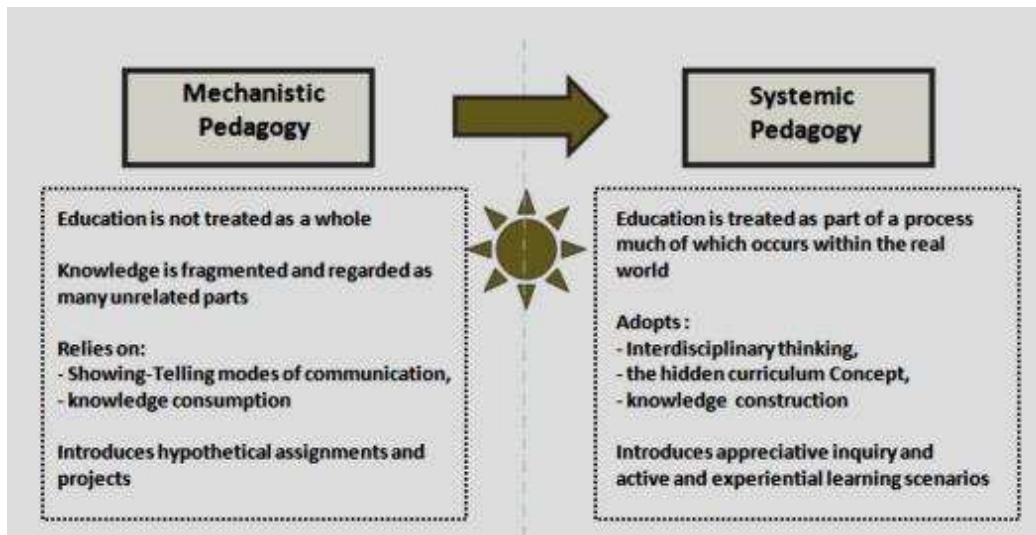


Figure 1: Shifting pedagogies for producing a more responsive workforce (based on Salama, 2005).

4. Transformative Pedagogy and the Hidden Curriculum

While educators strive to impart the requisite knowledge necessary for producing professionals with successful careers, the way knowledge is transmitted has significant professional and social implications (12, 13). Concomitantly, there is an urgent need to confront issues that pertain to the nature of reality “what” and the way in which knowledge about that reality is conveyed to future professionals “how.” Transformative pedagogy and its underlying concepts address the potential gaps of “what” and “how.”

Transformative pedagogy – a term that refers to interactional processes and dialogues between educators and students which invigorate the collaborative creation and distribution of power in the learning setting. As a concept, it is based on the fact that the interaction between educators and students reflects and fosters the broader societal pattern (13). Transformative pedagogy in university education is about balancing the act of creating ideas and solutions with the social and environmental responsibilities that should be embedded in this act. While transformative pedagogy is not confined to a static definition, it builds on the perspectives of critical pedagogy and its underlying hidden curriculum concept.

Critical pedagogy aims at reconfiguring the traditional student/ teacher relationship, where the teacher is the active agent—the knowledge provider—and the students are the passive recipients of the teacher's knowledge. Grounded on the experiences of both students and teachers, new knowledge is produced through the dialogical process of learning. Paulo Freire, the initiator of the concept, heavily endorses students’ ability to think critically about their educational situation; this way of thinking allows them to “*recognize connections between their individual problems and experiences and the social contexts in which they are embedded*” (14). In essence, critical pedagogy is then viewed as an approach to teaching, which attempts to help students question and challenge domination, and the beliefs and practices that dominate.

The hidden curriculum concept is thus concerned with questions that pertain to the ideology of knowledge and the social practices that structure the experiences of educators and students. According to Tomas Dutton, the hidden curriculum places emphasis on those unstated values, norms and attitudes which stem tacitly from the social relations of the learning setting in addition to the content of the course (15, 16). Based on the writings of theorists of education, one would conceive a number of issues imbedded in the hidden curriculum:

The everyday experiences of the learning setting (classroom, laboratory, studio).
The structure of the teaching/learning process.
The modes of producing and reproducing knowledge.
The routines of students and educators.
The rules that govern the relationship between students and teachers.

Theorists of education assert that these practices are equally as influential as any structured curriculum (14, 15). Therefore, adopting transformative pedagogy and its underlying concepts of critical pedagogy and the hidden curriculum in higher education can help educators interpret the relationship between knowledge and power, between themselves and their students. The assumption here is that knowledge in any educational setting always reinforces certain ideologies, values, and assumptions about the real world so as to sustain the interests of some groups and their values at the expense of others. In this respect one must admit that educational settings—whether studios, laboratories, lecture halls, or classrooms—are not neutral sites (16); they are integral to social, cultural, and political relations that can be found in real life. Transformative pedagogy is about understanding how knowledge is produced, what the components of such knowledge are, and what are the learning processes and social practices that can be used to transmit it. Transformative pedagogy is centered on critical inquiry and knowledge acquisition, assimilation, and production in a manner that encourages students and educators to critically examine traditional assumptions and to encounter social and environmental issues (13,17).

5. The Cognitive Capacity of Learners

Integral to the interest in knowledge construction and effective curriculum delivery is the way in which we approach education based on our students' capacity as humans, and based on the nature of knowledge about the realities we encounter. Two important sub-theories or bodies of concepts: the split brain theory and Jungian psychological types appear to be important in this context.

The Split Brain Theory

Mind research provides insights into the understanding that we possess two different but complementary ways of processing information. A linear step-by-step process analyzes the parts that make up a pattern, working on the left side of the brain; and a spatial relational style seeks and constructs patterns, working on the right side of the brain (18).

Both sides of the human brain perform cognitive operations, but each is developed or trained for a different mode of thinking. On the one hand, the left side is usually described as analytical, linear, and sequential, moving from one step to the next in a step-by-step manner. This way, it produces knowledge through inferential logic. For example, it deals with number, words, and parts. On the other hand, the right side of the brain is usually described as synthetic and holistic, constructing parts while recognizing their underlying relationships. It does not function linearly, but simultaneously, dealing with images, patterns and wholes. It produces knowledge through intuitive and imaginative understanding.

Linking the split brain theory to knowledge integration in university education, it is argued that teaching in any discipline requires the full activation of the two sides where, typically, there are programs that encompass courses that address bodies of knowledge that are rational, analytical and abstract in nature while implementing them into intuitive and imaginative conceptual mental activities.

Psychological Types and Epistemological Balance

I refer in the context of understanding cognitive capacity of learners to Carl Gustav Jung whose work had a strong impact on analytical psychology (Jungian Psychology) and also (but with lesser impact) on understanding human thinking and behavior. Jung emphasized the importance of

balance and harmony. He cautioned that modern humans rely too heavily on science and logic and would benefit from integrating spirituality and an appreciation of the unconscious realm (19).

The psychological types or the epistemological balance that Jung called for matches the concept underlying the split brain theory (Jung, 1976). Within such a balance, it is postulated that people can feel, think, perceive, and imagine both as individuals and in groupings. However, it is conceived that some human functions tend to inhibit other functions. Thinking and feeling, perception and intuition, and introversion and extroversion block each other. Each function in this balance has its own particular area in which it performs better than in others (20). Feeling excels at well-being and belonging, thinking excels at distinguishing one's physical surroundings, intuition excels at generating options, introversion produces personal view points, and extroversion enables people to share thoughts and ideas with others. The preceding understanding would have strong implication on the way in which university curricula and their contents are structured, and also on the processes and procedures adopted in a learning environment.

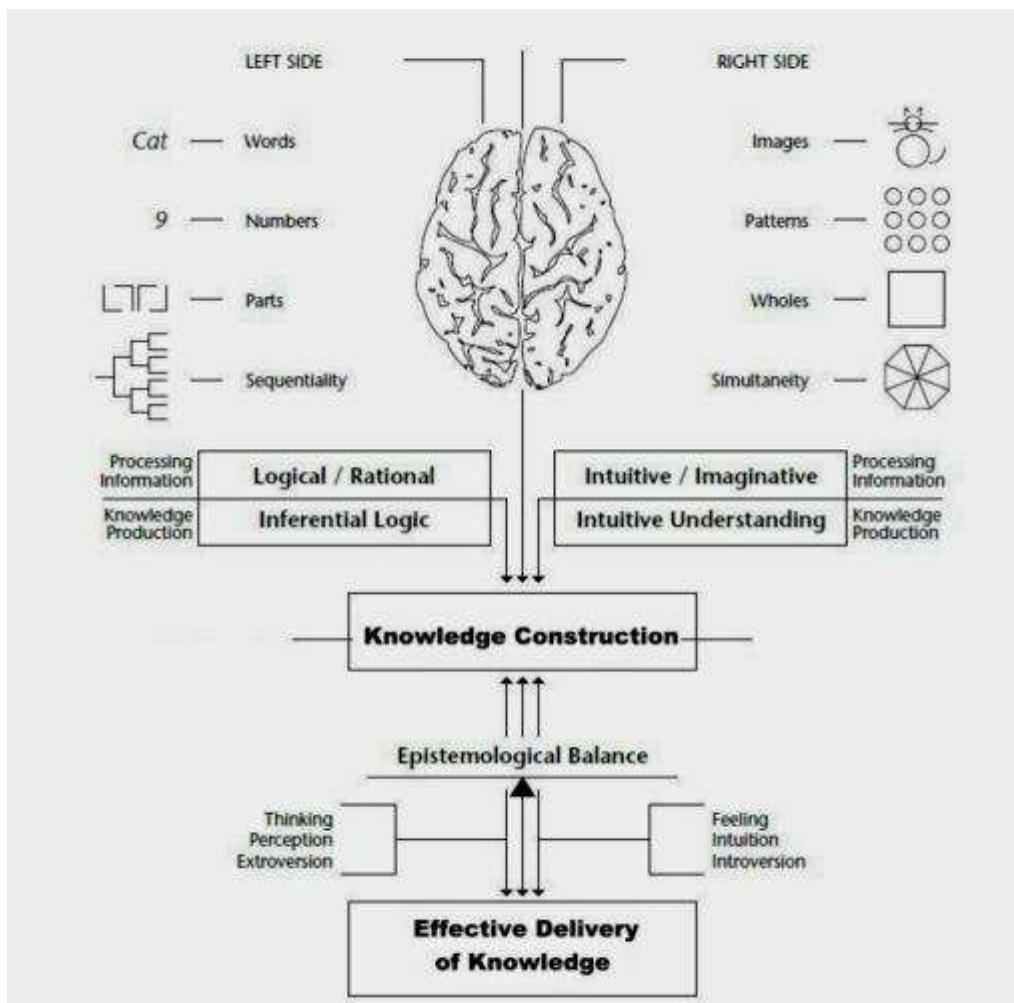


Figure 2: Addressing the cognitive capacity of learners for effective knowledge construction, production, and delivery (based on Salama, 2009).

6. Moving Forward: Scenarios for Knowledge Construction in University Education

A number of scenarios can be established to address the move away from knowledge consumption to knowledge construction and the efficient and effective curriculum delivery. However, two are selected to delineate desired concepts and responsive teaching practices:

Appreciative Inquiry

Over the past decade Appreciative Inquiry (AI) has emerged as a practice for approaching change from a holistic framework. Based on the belief that human systems are made and imagined by those who live and work within them, Appreciative Inquiry leads systems to move toward the generative and creative images that reside in their most positive core — their values, visions, achievements, and best practices (21). In theory, AI is a perspective, a set of principles and beliefs about how human systems function, a departure from the past metaphor of human systems as machines. In practice, AI can be used to co-create the transformative processes and practices appropriate to the culture of a particular organization (an educational system, a school, a course, or a classroom/studio environment). In essence, a culture of an organization represents the practices involved and the environment that accommodates them.

Contrary to problem solving where the primary focus is on what is wrong or broken, AI focuses attention on what works in an organization and on its physical environment (22). The tangible result of the inquiry process could be developed in the form of a series of statements that describe where the organization wants to be, based on the high moments of where it has been.

Adopting Appreciative Inquiry paradigm in university education is not “wishful thinking;” it can be applied in either classroom or other learning settings. In classroom settings, students can be involved in a process of identifying positive aspects in specific environments, and they can also perform various research assignments and bring to the classroom results of field studies that can be debated and discussed. This represents a radical shift in the way in which knowledge construction in educational settings, typically aim at revealing problems.

Active and Experiential Learning

A considerable number of studies are rising to challenge university faculty to develop teaching approaches that represent transformative pedagogies, simply moving away from thinking of students as passive listeners to active learners. However, this would seem “easier said than done.” According to Bonwell (23), in recent years the incorporation of active learning strategies into the daily routine of classroom instruction became a necessity. While there is a surge in the development of knowledge on active learning (Judith S. Liebman, <http://education.forum.informs.org/active.htm>), one would limit this discourse to the characteristics of and the need for active learning (24).

The major characteristic of active learning is that students are engaged in individual or group activities during the class session including reading, discussing, commenting, and exploring. While these activities are carried out by the students, they are facilitated by the professor, and students can receive immediate feedback (25). Notably, in active learning students are involved in higher-order thinking that simultaneously involves analysis, synthesis, and evaluation of a wide spectrum of issues and phenomena. In the context of the university classroom, active learning involves students in doing things and thinking about and discoursing what they are doing.

Remarkably, the amount of information retained by students typically declines substantially after ten minutes (25). The results of research comparing lecturing versus active discussion techniques indicate that students favour discussion methods over lecture and the one-way mode of knowledge. Theorists (23, 24, 25) assert that students do not learn much by sitting in class, listening to faculty, memorizing pre-packaged and ready-made interpretations; they all agree that students must talk about what they are learning, write about it, and relate it to past experiences.

Experiential learning is contrasted with learning in which the learner only reads about, hears about, talks about, writes about these realities but never comes in contact with them as part of the learning process. Mistakenly, some educators equate experiential learning only with “off campus” or “non-classroom” learning. However, a class in history or theory of a subject might incorporate periods of student practice on theory exercises and critical thinking problems rather than consisting entirely of lectures about theories. Similarly, a class in ‘Fundamental of Science’ might

involve critical analysis exercises on biological phenomena and how they are perceived. Both classes might involve field visits where students are in close contact with the environment, exploring culture, bio-diversity, people behaviour, and be part of that environment. All of these mechanisms involve an experiential learning component. Learning through experience involves not merely observing the phenomenon being studied but also doing something with it, such as testing its dynamics to learn more about it, or applying a theory learned about it to achieve some desired results.

Active and experiential learning as concepts and instructional strategies appear to be two sides of the same coin. While they differ in terminology, they share similar aims and qualities. They both aim at increasing students' motivation, placing emphasis on the exploration of attitudes and values. In both of them, less emphasis is placed on knowledge transmission but greater emphasis is placed on developing students' critical thinking abilities.

A Personal Voice

While many educators would claim that the ideas and concepts introduced in this article are already adopted and that the scenarios proposed are already pursued, one would ask: have they become integral components of students learning in higher education? It is evident that these scenarios—among others—form the core of transformative pedagogy and for knowledge integration in university education. They have the capacity to integrate fragmented pieces of knowledge required for the “whole-student” or the “whole professional.” While these scenarios are just examples of a number of ideas that can be proposed, they relate directly to overcoming issues associated with conventional teaching practices, while responding to the shift from mechanistic to systemic pedagogy. In fact, they represent beginnings for harvesting the advantages of transformative pedagogy and its underlying concepts, while addressing the cognitive capacity of learners thereby leading to efficient and effective curriculum delivery .

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